RECLAMATION

Managing Water in the West

San Luis Drainage Feature Re-evaluation

Feasibility Report

Appendix B

Appraisal Level Four-Account Analysis of the Environmental Quality Account and Other Social Effects Account Resources

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

November 2007

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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	NO ACTION / WITHOUT PROJECT	INVALLEY DISPOSAL	INVALLEY DISPOSAL GROUNDWATER QUALITY	INVALLEY DISPOSAL WATER NEEDS	INVALLEY DISPOSAL DRAINAGE IMPAIRED	OCEAN DISPOSAL	DELTA DISPOSAL CHIPS ISLAND	DELTA DISPOSAL CARQUINEZ STRAIT
ENVIRONMENTAL QUALITY (EQ) ACCOUNT RESOURCES								
SURFACE WATER RESOURCES								
Delta Drinking Water Intakes	Any improvements in WQ would be generally offset by reduced New Melones dilution releases. No effect.	Drainwater no longer discharged to or disposed of in the San Joaquin River. No effect.	Drainwater no longer discharged to or disposed of in the San Joaquin River. No effect.	Drainwater no longer discharged to or disposed of in the San Joaquin River. No effect.	Drainwater no longer discharged to or disposed of in the San Joaquin River. No effect.	Drainwater no longer discharged to or disposed of in the San Joaquin River. No effect.	Treated drainwater is disposed near Mallard and Rock Sloughs. Se, bromide, TDS, and TOC are expected to increase but the increase would not cause MCLs to be exceeded. No significant effect.	Treated drainwater is disposed near Mallard and Rock Sloughs. Se, bromide, TDS, and TOC are expected to increase but the increase would not cause MCLs to be exceeded. No significant effect.
Water Quality in the San Joaquin River and tributaries	Improvements in WQ due to discontinuation of GDA drainage would be somewhat offset by continued GDA seepage and storm flows. Beneficial but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.	Reduction in accretions to river due to land retirements, Firebaugh sumps, and shifting of drainage to disposal facilities. Beneficial effect, but not significant.
Flow in the San Joaquin River and Mud Slough	Flow decreases due to discontinuation of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. No significant effect.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.	Flow decreases over project life due to removal of GDA drainage. Adverse effect, but not significant.
New Melones Reservoir Operations	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.	Required dilution flow releases can be lowered. Beneficial effect, but not significant.
Bay-Delta Water Quality	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Drainwater no longer discharged to or disposed of in the San Joaquin River. Beneficial effect, but not significant.	Water quality degraded in the immediate vicinity of the diffuser; water quality objectives (WQOs) met outside of mixing zone. No significant effect.	Water quality degraded in the immediate vicinity of the diffuser; water quality objectives (WQOs) met outside of mixing zone. No significant effect.
Ocean Water Quality	No effect.	No effect.	No effect.	No effect.	No effect.	Water quality degraded in the immediate vicinity of the diffuser; WQOs met outside of mixing zone. No significant effect.	No effect.	No effect.
Water Quality of Irrigation Supply	No changes in DMC water supply quality. No effect.	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**	Firebaugh sump flows prevented from entering the DMC. **Significant beneficial effect.**
Construction Impacts on Surface Water Resources	No effect.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.	All effects temporary or mitigated by siting, design, or construction BMPs. No residual significant effects.
GROUNDWATER RESOURCES								
Drinking Water Supplies	Reduction in drainwater from retirements would slow contamination of drinking water sources. Beneficial effect, but not significant.	Reduction in drainwater would slow contamination of drinking water sources. Beneficial effect, but not significant.	Reduction in drainwater would slow contamination of drinking water sources. Beneficial effect, but not significant.	Reduction in drainwater would slow contamination of drinking water sources. Beneficial effect, but not significant.	Large reduction in drainwater would slow contamination of drinking water sources. **Significant beneficial effect.**	Reducing drainwater recharge would slow the transport of contaminated groundwater toward drinking water wells. Beneficial effect, but not significant.	Reducing drainwater recharge would slow the transport of contaminated groundwater toward drinking water wells. Beneficial effect, but not significant.	Reducing drainwater recharge would slow the transport of contaminated groundwater toward drinking water wells. Beneficial effect, but not significant.
Groundwater Salinity	Increase of 10 percent in GDA (adverse), but minor improvement in WWD. Not a significant effect.	Increase of 3 percent. Not a significant effect.	Increase of 3 percent. Not a significant effect.	Increase of 3 percent. Not a significant effect.	Increase of 3 percent. Not a significant effect.	Slight increase. Not a significant effect.	Slight increase. Not a significant effect.	Slight increase. Not a significant effect.
Bare-Soil Evaporation	Rate increase by 0.16 ft/yr. Adverse effect, but not significant.	Rate decreases by 0.24 ft/yr **Significant beneficial effect.**	Rate decreases by 0.23 ft/yr **Significant beneficial effect.**	Rate decreases by 0.23 ft/yr **Significant beneficial effect.**	Rate decreases by 0.23 ft/yr **Significant beneficial effect.**	Rate decreases by 0.24 ft/yr **Significant beneficial effect.**	Rate decreases by 0.24 ft/yr **Significant beneficial effect.**	Rate decreases by 0.24 ft/yr **Significant beneficial effect.**

	NO ACTION / WITHOUT PROJECT	INVALLEY DISPOSAL	INVALLEY DISPOSAL GROUNDWATER QUALITY	INVALLEY DISPOSAL WATER NEEDS	INVALLEY DISPOSAL DRAINAGE IMPAIRED	OCEAN DISPOSAL	DELTA DISPOSAL CHIPS ISLAND	DELTA DISPOSAL CARQUINEZ STRAIT
Undrained area affected by shallow water table	Area decreases by 44 mi^2. Beneficial effect, but not significant.	Area decreases by 161 mi^2. **Significant beneficial effect.**	Area decreases by 205 mi^2. **Significant beneficial effect.**	Area decreases by 214 mi^2. **Significant beneficial effect.**	Area decreases by 226 mi^2. **Significant beneficial effect.**	Area decreases by 161 mi^2. **Significant beneficial effect.**	Area decreases by 161 mi^2. **Significant beneficial effect.**	Area decreases by 161 mi^2. **Significant beneficial effect.**
BIOLOGICAL RESOURCES								
Federally-listed Threatened and Endangered Species								
Adverse effects resulting in take of a *federally-listed terrestrial* species and/or loss, degradation, fragmentation, or disturbance of habitat ***(excluding potential effects from Se bioaccumulation)***.	No significant effects.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. All effects temporary or mitigable by utilizing appropriate siting, designs, or construction BMPs. No significant effects.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. All effects temporary or mitigable by utilizing appropriate siting, designs, or construction BMPs. No significant effects.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. All effects temporary or mitigable by utilizing appropriate siting, designs, or construction BMPs. No significant effects.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. All effects temporary or mitigable by utilizing appropriate siting, designs, or construction BMPs. No significant effects.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. Section 7 consultation has not been initiated for all out-of-valley facilities; however, all adverse effects are expected to be temporary or fully mitigable by utilizing appropriate siting, designs, or construction BMPs.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. Section 7 consultation has not been initiated for all out-of-valley facilities; however, all adverse effects are expected to be temporary or fully mitigable by utilizing appropriate siting, designs, or construction BMPs.	Potentially significant adverse effects to occupied / unoccupied habitats (SJKF, BAEA) during construction or operation. Section 7 consultation has not been initiated for all out-of-valley facilities; however, all adverse effects are expected to be temporary or fully mitigable by utilizing appropriate siting, designs, or construction BMPs.
Adverse effects resulting in take of a *federally-listed freshwater aquatic/wetland* species and/or loss, degradation, fragmentation, or disturbance of its habitat ***(excluding potential effects from Se bioaccumulation)***.	No construction-related effects. Reduction Mud Slough flows after 2009 potentially could adversely affect GGS, if present, but associated improvement in WQ would generally offset the flow reductions. No effect. Occasional uncontrolled drainwater and stormwater of poor quality entering GDA wetland channels potentially could temporarily degrade some aquatic habitats that may support GGS and RLF. Potential adverse effect, but not significant.	Potential significant adverse effects to GGS and RLF from construction activities. All effects temporary or mitigable by siting, design, or construction BMPs. No significant effects.	Potential significant adverse effects to GGS and RLF from construction activities. All effects temporary or mitigable by siting, design, or construction BMPs. No significant effects.	Potential significant adverse effects to GGS and RLF from construction activities. All effects temporary or mitigable by siting, design, or construction BMPs. No significant effects.	Potential significant adverse effects to GGS and RLF from construction activities. All effects temporary or mitigable by siting, design, or construction BMPs. No significant effects.	Potential significant adverse effects to GGS and RLF from construction activities. All effects temporary or mitigable by siting, design, or construction BMPs. No significant effects.	Potential adverse effects to California clapper rail, saltmarsh harvest mouse, four vernal pool crustaceans, California tiger salamander, RLF, and GGS from construction of aqueduct **presumed to be significant.** Section 7 consultation will be reinititated if alternative is selected. Potential adverse effects to three Chinook salmon ESUs, Central Valley steelhead, Delta smelt, and green sturgeon during construction of underwater outfall **presumed to be significant.** Section 7 consultation will be reinititated if alternative is selected.	Potential adverse effects to California clapper rail, saltmarsh harvest mouse, four vernal pool crustaceans, California tiger salamander, RLF, and GGS from construction of aqueduct **presumed to be significant.** Section 7 consultation will be reinititated if alternative is selected. Potential adverse effects to three Chinook salmon ESUs, Central Valley steelhead, Delta smelt, and green sturgeon during construction of underwater outfall **presumed to be significant.** Section 7 consultation will be reinititated if alternative is selected.
	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.	Minor beneficial effect to GGS and RLF from general overall improvement in water quality in Grasslands area habitats. Beneficial effect, but not significant.
Adverse effects resulting in take of a *federally-listed marine/coastal aquatic* species and/or loss, degradation, fragmentation, or disturbance of its habitat ***(excluding potential effects from Se bioaccumulation).***	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	Adverse effects to tidewater goby and SNPL during construction potentially significant but fully mitigable by utilizing appropriate siting, design, or construction BMPs. Formal Section 7 consultation will be reinititated if this alternative would be selected.	No effects to marine / coastal species.	No effects to marine / coastal species.

	NO ACTION / WITHOUT PROJECT	INVALLEY DISPOSAL	INVALLEY DISPOSAL GROUNDWATER QUALITY	INVALLEY DISPOSAL WATER NEEDS	INVALLEY DISPOSAL DRAINAGE IMPAIRED	OCEAN DISPOSAL	DELTA DISPOSAL CHIPS ISLAND	DELTA DISPOSAL CARQUINEZ STRAIT
Individual-level effects to *federally-listed special status species* ***due to Se bioaccumulation*** in the Bay-Delta	Minor adverse effects from continued Se loading in the San Joaquin River entering Bay-Delta. Adverse effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Potentially harmful Se bioaccumulation in green sturgeon. Formal Section 7 consultation would be reinitiated if this alternative would be selected. **Potentially unavoidable adverse effect.**	Potentially harmful Se bioaccumulation in green sturgeon. Formal Section 7 consultation would be reinitiated if this alternative would be selected. **Potentially unavoidable adverse effect.**
Individual-level effects to *federally-listed special status species* ***due to Se bioaccumulation*** in the San Joaquin Valley	Minimal likelihood of elevated Se exposure risk to any listed species with continued operation of existing reuse area. No significant effects.	Potential adverse effects to SJKF at 19,000 acres of reuse areas and least tern at 3,290 acres of evaporation basins addressed during formal consultations with USFWS. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 16,700 acres of reuse areas and least tern at 2,890 acres of evaporation basins addressed during formal consultation with USFWS. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 12,500 acres of reuse areas and least tern at 2,150 acres of evaporation basins addressed during formal consultation with USFWS. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 7,500 acres of reuse areas and least tern at 1,270 acres of evaporation basins addressed during formal consultation with USFWS. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 19,000 acres of reuse areas. Formal Section 7 consultation would be reinitiated if this alternative would be selected. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 19,000 acres of reuse areas. Formal Section 7 consultation would be reinitiated if this alternative would be selected. **Incidental take would be a potentially unavoidable adverse effect.**	Potential adverse effects to SJKF at 19,000 acres of reuse areas. Formal Section 7 consultation would be reinitiated if this alternative would be selected. **Incidental take would be a potentially unavoidable adverse effect.**
Individual-level effects to *federally-listed special status species* ***due to Se bioaccumulation*** in Morro Bay vicinity	No effect.	No effect.	No effect.	No effect.	No effect.	No significant effects anticipated.	No effect.	No effect.
State-listed Threatened and Endangered Species								
Adverse effects resulting in take of a *state-listed terrestrial* species and/or loss, degradation, fragmentation, or disturbance of habitat ***(excluding potential effects from Se bioaccumulation).***	No effect. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, PEFA, BAEA, BLRA, YECU, and BUOW during construction and operation. All significant effects mitigable. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, PEFA, BAEA, BLRA, YECU, and BUOW during construction and operation. All significant effects mitigable. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, PEFA, BAEA, BLRA, YECU, and during construction and operation. All significant effects mitigable. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, PEFA, BAEA, BLRA, YECU, and BUOW during construction and operation. All significant effects mitigable. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, BUOW, and giant kangaroo rat during construction or operation of aqueduct and other facilities. All significant adverse effects expected to be temporary or mitigable by utilizing appropriate siting, designs, and BMPs. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, BUOW, and giant kangaroo rat during construction or operation of aqueduct and other facilities. All significant adverse effects expected to be temporary or mitigable by utilizing appropriate siting, designs, and BMPs. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.	Potential significant adverse effects to SJKF, SWHA, BUOW, and giant kangaroo rat during construction or operation of aqueduct and other facilities. All significant adverse effects expected to be temporary or mitigable by utilizing appropriate siting, designs, and BMPs. Potential improvements in foraging habitats for SWHA and SACR from land retirements (conversion to dryland farming or grazing). Beneficial effect, but not significant.
Adverse effects resulting in take of a *state-listed freshwater aquatic/wetland* species and/or loss, degradation, fragmentation, or disturbance of its habitat ***(excluding potential effects from Se bioaccumulation).***	No construction-related effects. No effect.	Potential significant adverse effects to GGS and RLF during construction activities. All significant effects mitigable. No effect.	Potential significant adverse effects to GGS and RLF during construction activities. All significant effects mitigable. No effect.	Potential significant adverse effects to GGS and RLF during construction activities. All significant effects mitigable. No effect.	Potential significant adverse effects to GGS and RLF during construction activities. All significant effects mitigable. No effect.	Potential significant adverse effects to GGS and RLF during construction activities. All significant effects mitigable. No effect.	Potential significant effect to GGS, RLF, CLRA, BLRA, saltmarsh harvest mouse, Calif. tiger salamander, and Delta button-celery during construction of aqueduct. All significant effects mitigable. Potential significant adverse effects to three Chinook salmon ESUs, Delta smelt, and green sturgeon during construction of outfall. All significant effects mitigable.	Potential significant effect to GGS, RLF, CLRA, BLRA, saltmarsh harvest mouse, Calif. tiger salamander, and Delta button-celery during construction of aqueduct. All significant effects mitigable. Potential significant adverse effects to three Chinook salmon ESUs, Delta smelt, and green sturgeon during construction of outfall. All significant effects mitigable.

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	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.	Minor improvement in water quality for GGS and RLF in Grasslands Area habitats. Beneficial but not significant.
Adverse effects resulting in take of a *state-listed marine/coastal aquatic* species and/or loss, degradation, fragmentation, or disturbance of its habitat ***(excluding potential effects from Se bioaccumulation).***	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	No effects to marine / coastal species.	Potentially significant adverse effects to tidewater goby and SNPL during construction fully mitigable by utilizing appropriate siting, design, or construction BMPs.	No effects to marine / coastal species.	No effects to marine / coastal species.
Individual-level effects to *state-listed special status species* ***due to Se bioaccumulation*** in the Bay-Delta	Minor adverse effects from continued Se loading in the San Joaquin River entering Bay-Delta. Adverse effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Minor beneficial effect from reduction in San Joaquin River Se load entering Bay-Delta from project vicinity. Beneficial effect, but not significant.	Potential significant risk of Se toxicity to green sturgeon in immediate vicinity of outfall. **Potentially unavoidable significant adverse effect.**	Potential significant risk of Se toxicity to green sturgeon in immediate vicinity of outfall. **Potentially unavoidable significant adverse effect.**
Individual-level effects to *state-listed special status species* ***due to Se bioaccumulation*** in the San Joaquin Valley	Minimal likelihood of elevated Se exposure risk to any state-listed species with continued operation of existing reuse area. No significant effects.	Possible significant adverse effects to SWHA, SACR, and SJKF at 19,000 acres of reuse areas and PEFA at 3,290 acres of evaporation basins. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 16,700 acres of reuse areas and PEFA at 2,890 acres of evaporation basins. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 12,500 acres of reuse areas and PEFA at 2,150 acres of evaporation basins. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 7,500 acres of reuse areas and PEFA at 1,270 acres of evaporation basins. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 19,000 acres of reuse areas. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 19,000 acres of reuse areas. **Potentially unavoidable significant adverse effect.**	Possible significant adverse effects to SWHA, SACR, and SJKF at 19,000 acres of reuse areas. **Potentially unavoidable significant adverse effect.**
Individual-level effects to *state-listed special status species* ***due to Se bioaccumulation*** in Morro Bay vicinity.	No effects.	No effects.	No effects.	No effects.	No effects.	No significant effects anticipated.	No effects.	No effects.
Other (non-listed) Terrestrial Species and Habitats								
Permanent loss of terrestrial habitat provided by existing agricultural and ruderal land if converted to project uses (including retirement).	109,100 total acres retired, including crop types that have high value to wildlife. **Potential unavoidable significant adverse effects for some foraging species.**	44,106 total acres retired. No significant effects.	92,592 total acres retired. No significant effects.	193,956 total acres retired, including crop types that have high value to wildlife. **Potential unavoidable significant adverse effects for some foraging species.**	308,000 total acres retired, including crop types that have high value to wildlife. **Potential unavoidable significant adverse effects for some foraging species.**	44,106 total acres retired. No significant effects.	44,106 total acres retired. No significant effects.	44,106 total acres retired. No significant effects.
	No new facilities would be constructed. No effects.	23,000 acres used for project facilities. No significant effects.	20,000 acres used for project facilities. No significant effects.	15,000 acres used for project facilities. No significant effects.	9,000 acres used for project facilities. No significant effects.	19,000 acres used for project facilities. No significant effects.	19,560 acres used for project facilities. No significant effects.	19,560 acres used for project facilities. No significant effects.
Permanent loss/degradation or creation/enhancement of common native or natural terrestrial habitat (e.g., annual grasslands).	No anticipated adverse effects to existing native or natural habitats. No agricultural lands would be converted to native or natural habitat; however, 4900 additional acres would be acquired and revegetated under the CVPIA Land Retirement Program. Beneficial effect, but not significant.	No facilities would be sited, constructed, or operated in native or natural habitats. No adverse effects. No agricultural lands would be acquired under project authority and converted to native or natural habitat. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	No facilities would be sited, constructed, or operated in native or natural habitats. No adverse effects. No agricultural lands would be acquired under project authority and converted to native or natural habitat. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	No facilities would be sited, constructed, or operated in native or natural habitats. No adverse effects. No agricultural lands would be acquired under project authority and converted to native or natural habitat. No beneficial effects. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	No facilities would be sited, constructed, or operated in native or natural habitats. No adverse effects. No agricultural lands would be acquired under project authority and converted to native or natural habitat. No beneficial effects. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	Approximately 2000 acres would be temporarily disturbed during aqueduct construction but would be fully restored or mitigated. No agricultural lands would be acquired under project authority and converted to native or natural habitat. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	Approximately 1000 acres would be temporarily disturbed during aqueduct construction but would be fully restored or mitigated. No agricultural lands would be acquired under project authority and converted to native or natural habitat. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.	Approximately 1000 acres would be temporarily disturbed during aqueduct construction but would be fully restored or mitigated. No agricultural lands would be acquired under project authority and converted to native or natural habitat. 4900 additional acres would be acquired and revegetated under CVPIA Land Retirement Program. Beneficial effect, but not significant.

	NO ACTION / WITHOUT PROJECT	INVALLEY DISPOSAL	INVALLEY DISPOSAL GROUNDWATER QUALITY	INVALLEY DISPOSAL WATER NEEDS	INVALLEY DISPOSAL DRAINAGE IMPAIRED	OCEAN DISPOSAL	DELTA DISPOSAL CHIPS ISLAND	DELTA DISPOSAL CARQUINEZ STRAIT
Permanent loss or degradation of native or natural terrestrial communities that are recognized as ecologically important, rare, or sensitive (e.g., oak woodlands).	No effects.	No facilities would be sited, constructed, or operated in recognized natural communities. No effects.	No facilities would be sited, constructed, or operated in recognized natural communities. No effects.	No facilities would be sited, constructed, or operated in recognized natural communities. No effects.	No facilities would be sited, constructed, or operated in recognized natural communities. No effects.	3 acres valley foothills riparian and 56 acres valley oak woodland permanently removed w/i aqueduct ROW would be fully mitigated offsite.	Up to 73 acres (including both wetland and upland habitat types) disturbed during aqueduct construction would be fully mitigable.	Up to 120 acres (including both wetland and upland habitat types) disturbed during aqueduct construction would be fully mitigable.
Population-level adverse effects to terrestrial resources ***due to Se bioaccumulation*** in the San Joaquin Valley	Elevated Se exposure risk at existing reuse areas reduced with continued design and operating improvements. No significant effects.	Elevated Se exposure risk at 19,000 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 16,700 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 12,500 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 7,500 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 19,000 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 19,000 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.	Elevated Se exposure risk at 19,000 acres of reuse areas reduced with proposed design and operating measures and subsequent monitoring and adaptive management. Significant effects mitigable.
Other (non-listed) Freshwater Aquatic and Wetland Species and Habitats								
Filling or draining of existing wetlands	No effects.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences nticipated. All effects mitigable. No net loss of existing wetland functions and values.	Limited occurrences anticipated. All effects mitigable. No net loss of existing wetland functions and values.
Alteration of historic stream channel characteristics	No effects.	Limited occurrences anticipated. All effects mitigable.	Limited occurrences anticipated. All effects mitigable.	Limited occurrences anticipated. All effects mitigable.	Very limited occurrences anticipated. All effects mitigable.	Numerous stream channel crossings associated with aqueduct; however, all effects mitigable.	Numerous stream channel crossings associated with aqueduct; however, all effects mitigable.	Numerous stream channel crossings associated with aqueduct; however, all effects mitigable.
Interference with migratory movements of native fish	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.
Adverse effects to aquatic resources (including waterbirds) ***(excluding potential effects from Se bioaccumulation)***	Existing canal fishery in 28-mi segment of SLD would be eliminated and flows in Mud Slough would be reduced after 2009. Unmanaged drainwater entering GDA wetland channels could degrade aquatic habitats. Adverse effects, but not considered significant.	O&M activities, hazing, salt toxicosis, feather encrust-ations, and other physical and behavioral conditions or stressors at 3290 acres of new evaporation ponds could adversely affect waterbirds. **Potentially unavoidable significant adverse effects.**	O&M activities, hazing, salt toxicosis, feather encrust-ations, and other physical and behavioral conditions or stressors at 2890 acres of new evaporation ponds could adversely affect waterbirds. **Potentially unavoidable significant adverse effects.**	O&M activities, hazing, salt toxicosis, feather encrust-ations, and other physical and behavioral conditions or stressors at 2150 acres of new evaporation ponds could adversely affect waterbirds. **Potentially unavoidable significant adverse effects.**	O&M activities, hazing, salt toxicosis, feather encrust-ations, and other physical and behavioral conditions or stressors at 1270 acres of new evaporation ponds could adversely affect waterbirds. **Potentially unavoidable significant adverse effects.**	Potential disturbances or permanent loss of aquatic or wetland habitats (e.g., stream crossings, beaches/dunes) along aqueduct and outfall. All significant effects would be fully mitigable.	Up to 73 acres (incl, both wetland and upland habitat types) temporarily disturbed during aqueduct construction. All significant effects would be fully mitigable.	Up to 120 acres (incl, both wetland and upland habitat types) temporarily disturbed during aqueduct construction. All significant effects would be fully mitigable.
Population-level adverse effects to aquatic resources (including waterbirds) ***due to Se bioaccumulation*** in the San Joaquin Valley	Elevated Se in occasional uncontrolled stormwater runoff and lateral seepage could again enter refuge supply channels and waterways in the GDA beginning after 2009. Adverse effects, but not significant.	3290 acres of new evaporation ponds could expose waterbirds to Se toxicity through bioaccumulation. Significant adverse effects fully mitigable with completion of mitigation facilities.	2890 acres of new evaporation ponds could expose waterbirds to Se toxicity through bioaccumulation. Significant adverse effects fully mitigable with completion of mitigation facilities.	2150 acres of new evapora-tion ponds could expose waterbirds to Se toxicity through bioaccumulation. Significant adverse effects fully mitigable with completion of mitigation facilities.	1270 acres of new evaporation ponds could expose waterbirds to Se toxicity through bioaccumulation. Significant adverse effects fully mitigable with completion of mitigation facilities.	No significant effect.	No significant effect.	No significant effect.
Population-level adverse effects to aquatic resources (including waterbirds) ***due to Se bioaccumulation*** in the Bay-Delta	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	Potential localized Se bioaccumulation in some bivalves, but toxicity in higher trophic level species is not expected. No significant effects.	Potential localized Se bioaccumulation in some bivalves, but toxicity in higher trophic level species is not expected. No significant effects.
Population-level adverse effects to aquatic resources (including waterbirds) ***due to Se bioaccumulation*** in the Morro Bay vicinity.	No effects.	No effects.	No effects.	No effects.	No effects.	Minor increase in Se risk in immediate vicinity of outfall. No effects outside of mixing zone. No significant effects.	No effects.	No effects.
GEOLOGY								
Effects resulting from damage to facilities from:	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.	No damage when designed to current codes.

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Earthquake ground shaking. Liquifaction and lateral spreading.	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.
Effects resulting from damage to facilities from: Surface fault rupture	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	With proper design and siting, no damage if pipeline fault crossing undergoes extension. No significant effects.	With proper design and siting, no damage if pipeline fault crossing undergoes extension. No significant effects.	With proper design and siting, no damage if pipeline fault crossing undergoes extension. No significant effects.
Effects resulting from damage to facilities from: Landsliding / mass wasting	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	With proper siting and slope stability designs, No significant effects.	No significant effects.	No significant effects.
Effects resulting from damage to facilities from: Subsidence / uplift Expansive soils	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.	No damage with careful groundwater mgmt and if expansive soils are removed or treated. No significant effects.
Effects resulting from damage to facilities from: Tsunami / Seiche	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	With proper design and siting, No significant effects.	No significant effects.	No significant effects.
Soil erosion resulting from construction/operation of project facilities	Unplanned discharges or stormwater runoff into the San Luis Drain may over-whelm existing conveyance capacity. Potential adverse effects, but not significant.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.	With proper facility design and siting, and construction BMPs, No significant effects.
Prevention of access to geologic resources of economic or scientific value	No effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.	No significant effects.
ENERGY RESOURCES								
Energy Use	Multiple small pumps dispersed throughout area. No significant effects.	Higher incremental energy requirement (25.793 GWh/yr). No significant effects.	Higher incremental energy requirement (22.05 GWh/yr). No significant effects.	Higher incremental energy requirement (15.55 GWh/yr). No significant effects.	Higher incremental energy requirement (9.307 GWh/yr). No significant effects.	Higher incremental energy requirement (81.4 GWh/yr). No significant effects.	Higher incremental energy requirement (15.0 GWh/yr). No significant effects.	Higher incremental energy requirement (15.0 GWh/yr). No significant effects.
Transmission Infrastructure	No effects.	Less than 0.5 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.5 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.5 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.5 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.25 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.2 percent increase in incremental load of nearest substation. No significant effects.	Less than 0.2 percent increase in incremental load of nearest substation. No significant effects.
AIR RESOURCES								
Construction phase – Fugitive PM10 and Equip-ment exhaust emissions	No construction of facilities. No significant effects beyond existing conditions.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.	Construction of facilities would generate emissions. All effects mitigable.
Operations phase – Vehicular traffic emissions Maintenance Emergency generators Odorous emissions	Existing facilities would continue to be operated. No significant effects beyond existing conditions.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.	No significant effects. No significant effects. No significant effects. No significant effects.
Operations phase – Emissions from Agricultural Operations	Approx 80,000 acres retired, reducing agriculture-related emissions. Beneficial effect, but not significant.	Approx 65,000 more acres remaining in production (not retired) than Without Project. Significant adverse effect, but mitigable.	Nearly equivalent to Without Project in acres remaining in production (approx 10,000 acres more). Beneficial effect, but not significant.	Approx 90,000 fewer acres remaining in production than Without Project. **Significant beneficial effect.**	Approx 200,000 fewer acres remaining in production than Without Project. **Significant beneficial effect.**	Approx 65,000 more acres remaining in production (not retired) than Without Project. Significant adverse effect, but mitigable.	Approx 65,000 more acres remaining in production (not retired) than Without Project. Significant adverse effect, but mitigable.	Approx 65,000 more acres remaining in production (not retired) than Without Project. Significant adverse effect, but mitigable.
LAND AND SOIL RESOURCES								
Prime Farmland	Loss of 76,000 acres. **Significant adverse effect.**	Increase of 294,000 acres. **Significant beneficial effect.**	Increase of 263,000 acres. **Significant beneficial effect.**	Increase of 198,000 acres. **Significant beneficial effect.**	Increase of 23,000 acres. **Significant beneficial effect.**	Increase of 295,000 acres. **Significant beneficial effect.**	Increase of 295,000 acres. **Significant beneficial effect.**	Increase of 295,000 acres. **Significant beneficial effect.**

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Farmland of Statewide Importance (FSI)	Decrease of 87,000 acres. **Significant adverse effect.**	Increase of 54,000 acres over Without Project. **Significant beneficial effect.**	Increase of 14,000 acres over Without Project. **Significant beneficial effect.**	Decrease of 91,000 acres. **Significant, mostly unavoidable adverse effect.**	Decrease of 211,000 acres. **Significant, mostly unavoidable adverse effect.**	Increase of 59,000 acres over Without Project. **Significant beneficial effect.**	Increase of 59,000 acres over Without Project. **Significant beneficial effect.**	Increase of 59,000 acres over Without Project. **Significant beneficial effect.**
Land/Soil resources replaced by evaporation basins or salt management areas.	Increase of approximately 160 acres. Adverse effect, but not significant.	3,290 acres of evaporation basins. **Significant unavoidable adverse effect.**	2,890 acres of evaporation basins. **Significant unavoidable adverse effect.**	2,150 acres of evaporation basins. **Significant unavoidable adverse effect.**	1,270 acres of evaporation basins. **Significant unavoidable adverse effect.**	None. No effect.	None. No effect.	None. No effect.
Formation of salt sinks	Increase of 5,300 acres. **Significant adverse effect.**	Decrease of 5,500 acres. **Significant beneficial effect.**	Decrease of 5,100 acres. **Significant beneficial effect.**	Decrease of 3,700 acres. **Significant beneficial effect.**	Decrease of 500 acres. **Significant beneficial effect.**	Decrease of 5,500 acres. **Significant beneficial effect.**	Decrease of 5,500 acres. **Significant beneficial effect.**	Decrease of 5,500 acres. **Significant beneficial effect.**
Construction-related effects (weighted index – higher number is a more extensive adverse impact)	None. No effects.	904 Significant adverse effect, but mitigable.	794 Significant adverse effect, but mitigable.	591 Significant adverse effect, but mitigable.	349 Level of effect not significant.	1604 Significant adverse effect, but mitigable.	1938 Significant adverse effect, but mitigable.	2163 Significant adverse effect, but mitigable.
Land Use	No significant change from existing agricultural use. No significant effects.	50,000 more acres of land remains in production than Without Project. Cropping patterns improve. **Significant beneficial effect.**	Minor changes compared to Without Project. No significant effects.	Major land use changes compared to Without Project inconsistent with local and state plans and laws. **Significant unavoidable adverse effect.**	Major land use changes compared to Without Project inconsistent with local and state plans and laws. **Significant unavoidable adverse effect.**	50,000 more acres of land remains in production than Without Project. Cropping patterns improve. **Significant beneficial effect.**	50,000 more acres of land remains in production than Without Project. Cropping patterns improve. **Significant beneficial effect.**	50,000 more acres of land remains in production than Without Project. Cropping patterns improve. **Significant beneficial effect.**
RECREATION RESOURCES								
San Joaquin Valley Wildlife Viewing/Hunting	Continued occasional uncontrolled discharges, seepage, and storm events could result in Se entering refuge/duck club water supplies, potentially reducing hunting opportunities. Potential adverse effect, but not significant.	With planned mitigation, the potential for Se exposure at evaporation basins and reuse areas is not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	With planned mitigation, the potential for Se exposure at evaporation basins and reuse areas is not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	With planned mitigation, the potential for Se exposure at evaporation basins and reuse areas is not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	With planned mitigation, the potential for Se exposure at evaporation basins and reuse areas is not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	Potential for Se exposure at reuse areas not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	Potential for Se exposure at reuse areas not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.	Potential for Se exposure at reuse areas not expected to affect waterfowl or wildlife populations such that recreation opportunities are adversely affected. No significant effects.
Ocean Recreation	No effects.	No effects.	No effects.	No effects.	No effects.	Outfall/diffuser would be 1.4 miles out to sea and 200 ft deep. No significant effects anticipated outside initial mixing zone. No significant effects.	No effects.	No effects.
Bay-Delta Recreation	No effects.	No effects.	No effects.	No effects.	No effects.	No effects.	Se could accumulate at higher levels in localized sport fish and waterfowl potentially resulting in additional human health advisories. **Potential significant adverse effect on recreation.**	Se could accumulate at higher levels in localized sport fish and waterfowl potentially resulting in additional human health advisories. **Potential significant adverse effect on recreation.**
AESTHETICS (VISUAL RESOURCES)								
Overall visual characteristics	No new visual elements introduced. Changes in crop patterns not considered significant. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effects.	No new visual elements introduced. No significant effect.
Scenic Highways	No new visual elements introduced along Highways 5. No effects.	No new visual elements introduced along Highways 5 and 152. No significant effects.	No new visual elements introduced along Highways 5 and 152. No significant effects.	No new visual elements introduced along Highways 5 and 152. No significant effects.	No new visual elements introduced along Highways 5 and 152. No significant effects.	No new visual elements introduced along Highways 5, 152, 41, 46, 101, and 1. No significant effects.	No new visual elements introduced along Highways 5, 152, 580, and 4. No significant effects.	No new visual elements introduced along Highways 5, 152, 580, and 4. No significant effect.
CULTURAL RESOURCES								
Cultural Resources	Undetermined number of resources potentially affected. Some unmitigated adverse effects presumably would occur because pre-	Undetermined number of resources potentially affected, including 5 known sites within 1 mile of proposed conveyance alignments.	Undetermined number of resources potentially affected. Potentially significant adverse effects, but mitigable.	Undetermined number of resources potentially affected. Potentially significant adverse effects, but mitigable.	Undetermined (but relatively, lesser) number of resources potentially affected. Potentially significant adverse effects, but mitigable.	92 resources potentially affected (largely along pipeline alignments) Potentially significant adverse effects, but mitigable.	166 resources potentially affected (largely along pipeline alignments) Potentially significant adverse effects, but mitigable.	197 resources potentially affected (largely along pipeline alignments) Potentially significant adverse effects, but mitigable.

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	construction surveys and mitigation would not be required. No effect (effects not regulated).	Potentially significant adverse effects, but mitigable.						
OTHER SOCIAL EFFECTS (OSE) ACCOUNT RESOURCES								
SOCIAL ISSUES AND ENVIRONMENTAL JUSTICE								
Social Issues	Minimal loss of jobs. No significant effects.	Small employment increase. No significant effects.	Small employment increase. No significant effects.	Small employment increase during construction. Small loss of jobs associated with OM&R and crop production. Overall, no significant effects.	Small employment increase during construction. Small loss of jobs associated with OM&R and crop production. Overall, no significant effect.	Small employment increase. No significant effects.	Small employment increase. No significant effects.	Small employment increase. No significant effects.
Environmental Justice	Minimal loss of jobs. No significant effects.	Small employment increase. No significant effects.	Small employment increase. No significant effects.	Small employment increase during construction. Small loss of jobs associated with OM&R and crop production. Overall, no significant effects.	Small employment increase during construction. Small loss of jobs associated with OM&R and crop production. Overall, no significant effect.	Small employment increase. No significant effects.	Small employment increase. No significant effects.	Small employment increase. No significant effects.

BAEA – Bald eagle
BLRA – California black rail
BMP -- Best management practice
BUOW – Burrowing owl
CLRA – Californinia clapper rail
LETE – California least tern
ESU – Evolutionarily significant unit
GDA – Grasslands Drainage Area
GGS – Giant garter snake
LETE – California least tern
O&M – Operation and maintenance
OM&R – Operation, maintenance, & replacement
PEFA – American peregrine falcon
RLF -- California red-legged frog
SACR – Greater sandhill crane
SJKF -- San Joaquin kit fox
SNPL – Western snowy plover
SWHA – Swainson's hawk
WQO – water quality objective
YECU – Western yellow-billed cuckoo